

C-3 Multi-modal Streets and Well Connected Circulation Networks

C-3.1 *Why multi-modal streets and a well-connected circulation network are essential to TOD/Ped*

A well-connected circulation network and multi-modal streets are the two most critical concepts for advancing pedestrian-oriented design and transit-oriented development in Marin. While a well-connected circulation network will create the connectivity required to successfully encourage residents to walk or bicycle to nearby destinations or to walk to transit, multi-modal streets are designed to safely accommodate the varied needs of all included transportation modes. These needs involve not only functionality and safety but also the need for attractiveness and a sense-of-place. The place-making afforded by well-designed streets can create a network of high quality environments between residences and places, nodes, and districts in a community.

Establishing a well-connected street network and building multi-modal streets will also support a community's efforts to establish compact, sustainable development that maximizes the benefits of already existing infrastructure and preserves resources at the urban and suburban fringe. In communities that are interested in multi-modal improvements and their benefits, but not yet ready to approve higher density housing or mixed-use development, connectivity and multi-modal improvements create a pedestrian-supportive and bicycle-accessible environment that can serve as a precursor to transit-oriented development and render an area "TOD-ready".

In addition, the retrofitting of strip development and single-use employment areas (along major arterial and along State Highway 101) with a well connected pedestrian circulation network can prepare such areas for an increase the mix and variety of uses (i.e. introduction of employment and housing uses in commercial areas and retail and service uses, and possibly housing, in employment areas) and creates the potential for people to include walking trips to stores or services into their daily routine that so not require additional vehicular trips beyond the initial commute or trip to the destination.

Jointly, improved connectivity and multi-modal streets will help to reduce the number of trips made by automobile.

C-3.2 *Marin-Specific Issues and Considerations*

If alternative modes are to succeed in reducing the overall number of vehicular trips made by residents, employees, and visitors in Marin, some critical changes have to be made to the transportation system. These changes are largely related to the concepts of connectivity and the capacity of streets to provide balanced accessibility and mobility for more than one transportation mode.

Creating A Well-connected Circulation Network

A high level of connectivity between residences and places of retail, business, employment, education, and social activity is essential for pedestrians, bicyclists, and transit users alike. However, a well-connected circulation network is also beneficial for vehicular traffic, as it tends to allow for alternative routes and for a separation of local and sub-regional and regional trips. In Marin topography and suburban development patterns have resulted in a branching (dendritic) roadway system in extensive areas of Marin. *[Illustrate with diagram of a branching vs. interconnected roadway system]* This has focused the full range from local to regional transportation functions onto individual arterials serving a string of communities, while the branch-like roadway network has created circuitous and indirect routes that tend to discourage people from walking and bicycling.

Similarly, indirect routes to bus stops and other transit-related facilities discourage people from the use of transit. *[Illustrate with diagram of a corridor]*

Creating mode-specific (bicycle and/or pedestrian) and integrated multi-modal transportation routes that provide alternatives to overburdened arterials is another important aspect of increasing the connectivity of Marin's transportation system. This applies particularly to routes that parallel major arterials and State Highway 101. Such routes could reduce the number of strictly local trips on arterials or the freeway. However, any shifts of trips onto such parallel routes need to be critically evaluated with respect to their effects on potential cut-through traffic in residential neighborhoods that are adjacent to the major arterials. For this reason, traffic calming measures tools that discourage cut-through traffic are included in the toolkit. In addition, bicycle routes that parallel busy arterials allow less experienced riders to bicycle away from the perceived hazards of a busy arterial and also help in situations where the available right-of-way for multi-modal improvements does not allow for the inclusion of bicycle lanes.

Highway 101 in Marin produces widely felt barrier effect for pedestrians and bicyclists and consists of more than one component: the freeway reduces the frequency of connections between the circulation networks on either side (including vehicular connections), the provision of safe and convenient pedestrian and bicycle connections across existing over- or underpasses is limited or lacking, and highway on- and off-ramps on roadways that cross under or over Highway 101 (and other freeways in Marin) are creating safety concerns for crossing pedestrians and bicyclists. These issues can be alleviated by building new multi-modal connections across or underneath the freeway, by building new or upgrading sidewalks and bicycle facilities (i.e. bicycle lanes) of existing over- and underpasses, and by designing freeway on- and off-ramps to maximize pedestrian and bicycle safety.

Creating Multi-modal Streets

Achieving a well-connected circulation network alone is not sufficient, as each individual segment of this network has to meet a range of safety and design criteria specific to each mode that uses the respective segment. *[Illustrate with either photos of an auto-dominated street and a multi-modal street in Marin or with a simulation of a multi-modal redesign]* Therefore, making Marin's transportation system multi-modal means that all existing and future transportation facilities (streets, bridges, paths, sidewalks, etc) need to be evaluated for their capacity to safely carry multi-modal trips.

While many of Marin's residential streets with sidewalks and low vehicular traffic are likely to be able to adequately accommodate pedestrians and bicyclists, this may not be the case with streets that do not have curbs and sidewalks, and along major collector streets and arterials with high volumes of vehicular traffic. Particularly Marin's heavily traveled arterials should be a high priority target for efforts to make streets multi-modal, as topography often renders these streets as the only connection between adjacent neighborhoods or even entire communities. In most cases, safe accommodation of pedestrians and bicyclists on arterials will involve providing curbs, wider sidewalks, improved crossings, upgraded bus stops, and the introduction of bicycle lanes. In some cases, it may not be possible to meet all safety and design criteria within the available (or acquirable) right-of-way. Then, on a case-by-case basis, and under the involvement of all affected stakeholder, trade-offs will have to be made to determine which and to which extent individual modes can be accommodated. Trade-offs involved in this process may include the responsible reduction of space available for vehicular traffic, the accommodation of some modes at the minimum end of applicable design criteria ranges (i.e. width), or the routing of bicycle traffic on alternative parallel routes (if available).

Place-making in the Public Realm

In addition, it is critical to the functionality and acceptability of modes alternative to the automobile that facilities and amenities associated with walking, bicycling, and transit use be attractive and be

designed to fit well with the existing or desired future character of the area. Attractive, safe and functional bus stops, for instance, will further advance transit use by projecting a positive image of this mode, a fact that has been supported by recent improvements to many bus transit systems around the country. *[Illustrate with photos of examples]* Consideration should be given to how stops along key arterials and within the Highway 101 right-of-way can be upgraded not only in accessibility but also in their attractiveness and overall image. Similarly, a well-buffered, attractive sidewalk that is accommodating of activities that are likely to occur based on the respective land use context, will invite people to walk to destinations in their neighborhood, or along an arterial that may also function as the main street of their neighborhood or community.

C-3.2 *Multi-modal Streets and Network Design – A Best Practices Resource Guide*

Issues and Tools/Tool-Finder

To follow

Tool 1: Pedestrian and Bicycle Master Planning

Some residential neighborhoods, commercial, retail, and employment areas in Marin lack facilities for pedestrians and bicyclists that are needed to support and encourage walking and bicycling as a non-recreational mode of transportation. Often pedestrian and bicycle routes are rendered circuitous by cul-de-sacs and branching street networks. Such conditions raise questions with respect to what and where improvements are needed, what the technical standards for such improvements should be, and how they should be prioritized and funded.

Conducting comprehensive planning specifically for pedestrians and bicyclists is often the best way for jurisdictions to answer these questions and to best target the available funds for improvements of walking and bicycling conditions.

Pedestrian and Bicycle Master Plans

Local jurisdictions should develop Pedestrian Master Plans (PMP) and Bicycle Master Plans. The master planning process identifies the specific pedestrian and bicycle infrastructure needs of a community and prioritizes new investment to support a particular level of pedestrian connectivity, safety, and comfort. A pedestrian or bicycle master can include any or all of the following elements:

- an inventory of a city's current pedestrian or bicycle travel patterns and infrastructure;
- the designation of pedestrian or bicycle routes of community-wide importance;
- identification of gaps in connectivity on these routes and methods to close them;
- a policy to determine the degree of improvements based on unmet needs;
- a map and list of highest-priority facilities, and
- an implementation program identifying specific policy changes and funding sources for improving pedestrian facilities.

A PMP may also be integrated with the community's required ADA Transition Plan, which identifies and sets forth an implementation program for needed improvements. Much of the survey work and improvements needed for a Transition Plan are similar to those needed for a PMP. This creates an opportunity for cost-sharing.

Pedestrian and bicycle master plans should use the latest available methods for identifying and providing the proper facilities to support pedestrian or bicycle travel.

Pedestrian or bicycle master planning for an extensive area is a significant undertaking. But for jurisdictions that are interested in improving the pedestrian environment, such planning is an invaluable tool for the identification and prioritization of needed infrastructure improvements and their implementation and funding.

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However, focusing on a few, small areas throughout the community may be a less daunting task than the comprehensive demands of a master planning effort and a good first step. Such more specific planning efforts include:

- Safe Routes to School;
- Safe Routes to Transit;
- Neighborhood Pedestrian Plans; and,
- Safety Troubleshooting at locations with higher rates of collisions.

Please refer to Tool X for more specific recommendations.

References

- American Association of State Highway and Transportation Officials, *Guide for the Planning, Design, and Operation of Pedestrian Facilities*, 2004;
- American Association of State Highway and Transportation Officials, *Guide for the Planning, Design, and Operation of Bicycle Facilities*, 1999;
- Santa Clara Valley Transportation Authority, *VTA Pedestrian Technical Guidelines*, 2003;
- SANDAG, *Planning and Designing for Pedestrians*, June 2002;
- Federal Highway Administration, *Pedestrian Facilities User Guide*, June 2002;

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Tool 2: Making Multi-modal Streets in Limited Right-of-Ways

Improvements to the pedestrian realm do not necessarily entail acquiring additional public right-of-way. Often, the additional width for sidewalks can be found in resizing travel, turning, and parking lanes. Figure X illustrates two cross sections: the first is a “typical” section for a four-lane urban collector street with a center median/turning lane (or two-way-left-turn lane); the second is the same right-of-way reconfigured to allow 13-foot pedestrian realms.

Making decisions about the right-of-way trade-offs between the ideal dimensions for sidewalks, bicycle lanes, parking and travel lanes is a process that requires a clear understanding of the (context) type and function of the respective street (please refer to Tools X through X: *Sidewalks, Bicycle Lanes, Parking Lanes, and Travel Lanes* for recommended and standard dimension ranges).

As an example of assessing trade-offs and priorities, one can look at the Main Street (see Tool X) type. Because the function of the street is to emphasize pedestrian access to adjacent uses and create a vital community “place,” the higher priority elements are wide sidewalks including a frontage zone wide enough for window shopping and a generous furniture/landscape zone. Lower priority elements include the number and width of travel lanes, designated bike lanes (because at lower speeds bicyclists can safely be in the flow of traffic), and central medians.

For pedestrian-oriented streets such as the Main Street, medians might be considered a lower priority. Aesthetics aside, the primary benefit of a central median is that it can be an effective pedestrian refuge island at crossings. But the lower speeds and fewer lanes associated with a Main Street would not warrant such a refuge island. A central median with pedestrian refuge islands is better suited to wider streets with more than two lanes in each direction and/or where traffic speeds exceed 30 mph.

In another case, the creation of dedicated bicycle lanes may be of a high priority to expand the network of bicycle facilities (i.e. as called for in a community’s Bicycle Master Plan). Here vehicular and pedestrian needs have to be balanced with the need for dedicated bicycle lanes. This process requires the involvement of all key stakeholders and that of Public Works staff. If a state highway is the subject of considered changes, Caltrans staff should be involved at an early stage.

References

- Santa Clara Valley Transportation Authority, *VTA Pedestrian Technical Guidelines*, 2003:
 - Section 2.3 Making Trade-offs: Using a “Roadway Diet” to Create Additional right-of-Way.
- SANDAG, *Planning and Designing for Pedestrians*, June 2002:
 - Section 3.7.4 Pedestrians and Bicyclists: Maintaining a Safe Alliance

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- City of Palo Alto, *El Camino Real Master Schematic Design Plan* (Public Review Draft), 2003

This report illustrates at length how a busy arterial can be transformed into a multi-modal, community-oriented street without increases in right-of-way width.

- American Association of State Highway and Transportation Officials, *Flexibility in Highway Design*, 2004;

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Tool 3: Creating Non-Roadway Connections

In parts of Marin, development patterns have favored low street connectivity, giving rise to buildings that are set back behind parking lots or landscaped areas, ‘campus-style’ sites that feature multiple, widely-spaced buildings, and streets that dead-end instead of connecting with other streets. In this setting, sidewalks along roadways cannot complete the pedestrian system by themselves; non-roadway connections are also needed to provide the necessary directness for high pedestrian access.

Trails, of the longer, recreational variety, are one type of non-roadway pedestrian walkways or multi-use trails. These may run through a park or alongside a waterway, or other natural setting, and are used by walkers, runners, bicyclists, rollerbladers, and horseback riders. These trails are important for pedestrians and bicyclists, and documents that provide guidance on their design are discussed under **Tool X**.

The focus of this tool is another type of non-roadway connection, one that is shorter and serves more to efficiently connect pedestrians to their destinations. These walkways are not immediately adjacent to a street; they connect to pedestrian facilities and building entrances to enhance overall local connectivity and shorten pedestrian travel distance, and thus alleviate some of the limitations imposed by branch-like street networks and/or steep grades in residential neighborhoods along Marin’s foothills and in other locations. The listed measures typically suggest adding “infill” segments of pedestrian or ped/bike facilities, such as pathways, accessways, cul-de-sac connectors, and stairways.

Non-roadway connections can come in the following forms.

- Pedestrian **pathways** connect sidewalks with building entrances where buildings are not immediately adjacent to the street. On especially large sites with multiple buildings widely spaced, pathways are essential for connecting one building to another and all buildings to the street and sidewalk. In general, pathways should be built to meet applicable ADA requirements. Their width should be between 10 and 12 feet, well lit, and have a minimum vertical clearance of 8 feet. Where adjacent to a street, a minimum separation of 5 feet should be maintained.
- Midblock **accessways** connect sidewalks through blocks in between buildings where blocks are long (see “Super Blocks”-sidebar). These accessways decrease the out-of-direction travel for pedestrians traversing areas with widely-spaced streets. Where possible, midblock accessways should have a usable width of 8 feet and also include 10-foot wide planting areas on either side to allow for the planting of shade trees and other landscaping or amenities. *[illustrate with image of superblock]*
- **Cul-de-sac connectors** make pedestrian connections where streets dead-end. In such neighborhoods, destinations that are close by can be rendered un-walkable by circuitous routes. Cul-de-sac connectors decrease walking distances, improving pedestrian connectivity. To enable emergency vehicle access cul-

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de-sac connectors should include a 20 foot wide fire lane with a surface capable of withstanding fire truck use (“turf block” or paving). The connector should be as straight as possible to create open sight-lines and include pedestrian lighting that provides at least 1.8 foot-candles to increase users’ sense of safety.

- **Stairways** are non-roadway connections used where grade-changes necessitate stairs instead of paths. Stairs have limited usefulness to pedestrians with mobility problems, alternative routes via sidewalks or ramps should therefore be provided where possible. Public stairways should be no less than five feet wide, provide hand rails, and have slip resistant tread surfaces. Treads (T) should be no less than 11 inches deep. Riser (R) height can be calculated by using the following formula: $2R+T=26$ to 27 inches.

The following resources provide more detailed information about non-roadway connections:

References

- SANDAG, *Planning and Designing for Pedestrians*, June 2002:
 - Section 3.7 Circulation System
 - Section 4.5.5 Trails and Pathways
 - Section 4.5.6 Midblock Accessways

This section also contains information about how to improve the circulation in existing “superblocks”.

 - Section 4.5.7 Cul-de-Sac Connectors
 - Section 4.5.8 Stairways
- Santa Clara Valley Transportation Authority, *Community Design & Transportation – A Manual of Best Practices for Integrating Transportation and Land Use*, 2003
 - Section 4 – A Multi-modal Approach to Streets (p. 4-21, The Pedestrian Environment)
- City of Portland – Office of Transportation, Engineering and Development, *Portland Pedestrian Design Guide*, June 1998
 - Section D – Guidelines for Pathways and Stairs
- Federal Highway Association, *Designing Sidewalks and Trails for Access, Part I*, U.S. Department of transportation, Washington D.C., 2003

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Tool 4: Creating Bicycle Connections

Marin offers a wide range of choices for the bicycle traveler and has an extensive network of paths, trails, lanes, and routes. In addition, bicycle boulevards, when used in an urbanized street network, provide safe routes parallel to major arterials. When designing bicycle connections, it is important to consider the potential users of the connection, whether they be seniors with limited mobility, children going to and from school, bicycle commuters, or tourists. Bicycle connections should be part of an integrated bicycle transportation system that is designed with appropriate connections and facilities for its users.

Bicycle connection measures can be classified into the following types.

- **Class 1 Trails** - independent rights-of-way separate from streets or highways. Vehicular activity is prohibited. These are often found in park-like or scenic settings. Trails are typically 10-12 feet wide. AASHTO provides dimensional, signage, and pavement marking standards.
- **Class 2 Bike Lanes** - on-street lanes dedicated and demarcated for bicycle travel. A bicycle lane is a portion of a road or highway that is designated by striping, signing, and pavement markings to provide preferential or exclusive use of the lane by bicyclists. Bike lanes are typically 4-6 feet in width. In some cases, a curbside parking lane can be striped to allow a shared parking lane and bicycle travel. This is typically done in areas where a full bicycle lane is not feasible
- **Class 3 Bike Routes** - located along roadways where dedicated bicycle lanes cannot fit or are not needed (for example, on a low-volume street), but are important to provide continuity in a bicycle system. Signage informs bicyclists and automobile drivers of the Bike Route designation, improving awareness, while improved roadway maintenance improves rider safety.
- **Bicycle boulevards**, sometimes called bicycle priority streets, are urban, low-volume streets where all types of vehicles (including cars) are allowed, but the roadway is modified to enhance bicycle safety and convenience. They might feature traffic-calming measures, such as speed humps and curved sections, and bicycle-friendly measures, such as reduced number of stops along the corridor, enhanced intersections, and bicycle-oriented wayfinding signage. Bicycle boulevards typically parallel busy arterial streets and offer a safer and more attractive option for cyclists.
- **Bicycle parking** can range from simple posts or trees to individual bicycle enclosures. Bicycle parking facilities offer places for bicyclists to store their bicycles in a safe and secure place, where they can end their trip or continue it using another form of transportation. It is important to have bicycle parking facilities at major destinations and transit centers.

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- **Bicycle stations** that provide safe-keeping of bicycles and other services may be considered for transit hub locations that are frequented by high numbers of bicyclists. Bicycle stations often have associated retail spaces that may sell bicycles, bicycle accessories, or provide bicycle maintenance and repair services. The bicycle station at the University Avenue Caltrain station in Palo Alto is a good working example of a bike station in the Bay Area. In order to be financially feasible a full-service bike stations needs to regularly house 50-60 bicycles and requires a footprint of about 1500 square feet.

References

- National Center For Walking and Bicycling Design Guidelines
http://www.bikewalk.org/bicycling/design_guide/bike_design_guide_index.htm
- Federal Highway Administration (FHWA)
<http://www.fhwa.dot.gov/environment/bikeped/publications.htm>
- American Association of State Highway and Transportation Officials (AASHTO)
<https://www.transportation.org/publications/bookstore.nsf/Categorized?openform&cat=Design/Operations/Planning>
- Manual on Uniform Traffic Control Devices, 2003 (paper or CD-ROM; \$75)
 - Part 9, Bicycles, provides standards for bicycle signage and pavement markings for roadways and shared-use paths.
- Guide for the Development of Bicycle Facilities, 3rd Edition, 1999 (paper, \$36-\$45)
- Rails-to-Trails Trails and Greenways Clearinghouse
<http://www.trailsandgreenways.org/>
- City of Berkeley – Bicycle Boulevard Program
<http://www.ci.berkeley.ca.us/transportation/Bicycling/BB/Guidelines/linkpag.htm>
- Federal Highway Administration Bicycle and Pedestrian Program
<http://www.fhwa.dot.gov/environment/bikeped/index.htm>
- Marin County Bicycle Coalition
<http://www.marinbike.org/Index.htm>;
<http://www.saferoutestoschools.org/>
- League of American Bicyclists
<http://www.bikeleague.org/index.cfm>

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Tool 5: Enhancing Transit Facilities

Providing high quality transit facilities is important in order to increase passenger comfort, to attract new users to the system, and to inform the public about where and how to board the transit system. The transit stop is, in effect, the transit provider's business card to customers and to the public. These facilities communicate an important message about transit and its role in the local community. *[Illustrate with photos of examples]* These facilities can provide weather protection, information, and seating. As wait times increase, the importance and value of passenger facilities also increase. When transit runs frequently and reliably, sometimes a bus stop sign will suffice. However, when transit runs only once or twice an hour, a place to sit, schedule information, and protection from the elements have greater importance. If a passenger is elderly, standing at a bus stop for ten minutes or more may be quite uncomfortable. If passengers are in a hurry, having schedule information will allow them to plan their trip more effectively. Typical passenger facilities can range from a simple bus stop sign on a sidewalk or paved area to higher quality passenger amenities such as shelters, seating, posted schedules, or even indoor waiting areas.

There are many measures available, which can focus on enhancing existing facilities and service. They include the following.

- **Well-designed stops** enhance safety, comfort, and reliability. Stops should be located where passengers can board or transfer conveniently and safely. Curb extensions or bulb outs can ease passenger boarding, reduce street crossing distances, and provide extra street-side space for passenger amenities. Buses that stop at a bus bulb typically do not exit the roadway travel lane, enabling them to resume their trip without having to wait for a break in traffic. *[diagrams to illustrate concepts]*
- **Well-placed stops** maximize ridership. Stops can be strategically placed to take advantage of land uses with traditionally high levels of ridership.
- **Land uses that are street oriented** and that are a short walk from the transit stop help attract and retain ridership making walking from the transit stop to the final destination short and convenient. (see Section X for additional guidance on pedestrian and transit supportive land uses)
- **Coordinating transfers** maximizes efficiency. Infrequency of service highlights the importance of timed transfers. After having potentially long waits at rural stops, passengers welcome well-timed transfers at key points in their journey because they help shorten overall trip time.

Resources

Transit Cooperative Research Program, *Guidelines for the location and Design of Bus Stops*. National Academy Press. Washington, DC. 1996;

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- Santa Clara Valley Transportation Authority, *VTA Pedestrian Technical Guidelines*, 2003:
 - Section 5 Pedestrian Access to Transit
- Santa Clara Valley Transportation Authority, *Community Design & Transportation – A Manual of Best Practices for Integrating Transportation and Land Use*, 2003
 - Appendix A – Community Planning for Bus Transit

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Tool 6: Roadway Overpasses and Underpasses

Where surface streets intersect with barriers such as railroad tracks, waterways, or high-speed freeways, the intersection often includes grade-separated over- or underpasses. At these locations, continuous and comfortable pedestrian facilities along the entire tunnel or grade-separated crossing are essential to the pedestrian environment. If preserving auto access across barriers is important, it is even more so for pedestrians, whose slower travel speed makes out-of-direction travel so much more inconvenient. For existing substandard bridges, consideration should be given to cantilevering a path to provide access for bicycles and pedestrians. For underpasses the provision of a higher than standard curb, additional sidewalk width, and appropriate lighting levels (day and night) are critical design criteria to providing pedestrians with the needed sense of safety. Bicycle lanes through tunnels and underpasses should also provide an added margin of safety. [\[provide photos and diagrams\]](#)

References

- Santa Clara Valley Transportation Authority, *VTA Pedestrian Technical Guidelines*, 2003:
 - Section 3.2 E. Roadway Overpasses and Underpasses
- American Association of State highway and Transportation Officials, *Guide for the Planning, Design, and Operation of Pedestrian Facilities*, 2004:
 - Section 3.2.9 Sidewalks for Highway Bridges, Underpasses, and Tunnels
- Federal Highway Administration, *Pedestrian Facilities User Guide*, June 2002:
 - Chapter 4, Section 6 Pedestrian Overpasses/ Underpasses

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Tool 7: Grade-Separated Crossings

Grade-separated crossings refer to pedestrian- and/or bicycle-only bridges or underpasses. These facilities are very expensive and should only be considered where it is not possible to provide an at-grade facility, such as at crossings of high-speed roadways, railways, and waterways.

Where grade-separated crossings are necessary, special care should be taken to create comfortable pedestrian space. Crossings perceived as uncomfortable will not be used. Over and underpasses should be considered only for crossing arterials with greater than 20,000 vehicle trips per day and speeds 35 - 40 mph and over. Underpasses will be perceived as unsafe if not sufficiently lighted and should be designed to be as short as possible and provide a clear line of site from one side of the underpass to the other.

References

- Santa Clara Valley Transportation Authority, *VTA Pedestrian Technical Guidelines*, 2003:
 - Section 3.2 G. Grade Separated Crossings
- American Association of State highway and Transportation Officials, *Guide for the Planning, Design, and Operation of Pedestrian Facilities*, 2004:
 - Section 3.5 Grade-Separated Crossings
- Federal Highway Administration, *Pedestrian Facilities User Guide*, June 2002:
 - Chapter 4, Section 6 Pedestrian Overpasses/ Underpasses

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Tool 8: Highway On/Off Ramps

Safety for pedestrians and bicyclists crossing highway on- and off-ramps while crossing under or over highways area a concern along Marin's segments of Highways 101, 37, and 580. These concerns can be addressed by designing freeway on- and off-ramps to maximize pedestrian and bicycle safety.

Freeway on- and off-ramps serve as the transition point for vehicles between traveling high, freeway speeds and low, neighborhood speeds. Where they meet surface streets, whether at an intersection or a merge point, it is essential for the motorist to be alerted to the transition to a pedestrian area.

On- and off-ramps in the pedestrian environment should include comfortable crossings for pedestrians, and encourage safe driving behavior. For off-ramps, this entails ensuring that vehicles exiting from freeways have slowed down to appropriate surface-street speeds so they can be vigilant of crossing pedestrians and bicycles. For on-ramps, it entails ensuring that vehicles do not accelerate to freeway speeds before they have entered the high-speed facility. Narrowing the crossing distance and/or providing a refuge island at ramp-street intersections is necessary to reduce the time the slower-moving disabled pedestrian is exposed.

References

- Santa Clara Valley Transportation Authority, *VTA Pedestrian Technical Guidelines*, 2003:
 - Section 3.2 F. Highway On/Off Ramps

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C-4.4 Parking

Parking is an essential part of new development in Marin County. Most households have private vehicles, and most trips are made by private auto. Particularly for commercial uses, the availability of parking is a critical factor for economic success.

At the same time, however, parking has a range of impacts on the community and environment:

- More parking leads to more traffic and congestion;
- Parking takes up land that could be devoted to more compact development or open space;
- Parking comprises a substantial portion of development costs, increasing the price of housing;
- Curb cuts for parking facilities can interrupt sidewalks and bike lanes, and impede buses; and,
- Parking lots and garages increase impervious surface area and stormwater runoff.

For these reasons, it is important that parking be provided in appropriate quantities, and closely matched to actual demand. The following tools can help to ensure that motorists can find a space, while avoiding exacerbating the negative impacts.

By allowing development to succeed with less parking, these innovative parking policies can support many of the principles for TOD/PeD in Marin County (*see Section X*), such as creating compact places, and providing residents of all incomes with quality housing choices. It is important to stress that, with the exception of maximum parking requirements, none of these strategies would force developers to provide less parking. They would still be free to respond to market demands.

It should also be noted that these tools are focused on changes that can be made to the zoning codes of local jurisdictions. Additional strategies relate to the management of public parking, such as on-street meters and Residential Permit Parking.

Existing Efforts

Many recent planning efforts have already addressed the issue of parking standards. For example, the Draft Marin Countywide Plan, released in February 2004, and Draft San Rafael General Plan, published in January 2004, present a range of parking-related policies, including the adoption of more flexible standards. Some older plans, such as the 1995 Sausalito General Plan, also include policies for more flexible requirements.

In addition, many of the strategies represent “tried and tested” practice in Marin, and have already been implemented in at least one town or city.

Where Are They Appropriate?

Parking strategies to promote TOD and PeD have often been seen as only applicable in large urban centers with intensive transit service. The potential policies discussed here, however, apply to a wide range of contexts. Some, such as credits for on-street parking or the greater use of tandem parking, have applicability across the County – there are no minimum levels of associated density or transit service. Even where a community does not anticipate a significant level of new development, revised parking policies can be important in ensuring that changes of use or minor infill projects contribute to local goals such as traffic reduction, or the enhancement of the pedestrian environment.

Other policies are best suited to specific areas, such as downtowns or transit corridors with higher-frequency service, and will not be appropriate in all towns and cities, particularly in more rural areas. Where this is the case, this is noted in the text for each tool.

It should be stressed that many of these policies have been introduced in comparable contexts, even where transit service is limited or non-existent. For example, Petaluma in Sonoma County recently adopted major revisions to its parking standards, as part of a wider shift to a new form-based code. These include the eventual abolition of minimum parking requirements altogether, and the adoption of extensive design standards to ensure that parking does not impact the pedestrian environment.

Issues and Tools/Tool Finder

Issue: Parking requirements often do not take into account variations in demand

Tools:

- **P-1: Tailored Minimum Parking Requirements** take into account the substantial variations within Marin. They can consider the characteristics of likely occupants based on housing type and geographic location.

Issue: Parking is used inefficiently – many spaces are not available to those who need them.

Tools:

- **P-3: Shared Parking.** Most land uses have different times of peak demand, allowing them to share the same physical parking spaces.
- **P-4: In-Lieu Fees and Parking Assessment Districts.** Instead of building parking on-site, public parking can be financed by one-time in-lieu fees or annual property assessments.
- **P-6: Off-Site Parking.** Allowing developers to provide parking nearby, instead of on-site, promotes shared parking and can reduce urban design impacts.

Issue: Parking consumes large amounts of land

Tools:

- **P-5: Tandem Parking/Other Flexible Solutions.** Tandem parking, parking lifts and valet parking allow more spaces to be squeezed into the same area of land.
- **P-6: Credit for On-Street Parking.** Often, developments have many adjacent curb parking spaces that can be credited towards the parking requirement.
- **P-7: Landscape Reserves** acknowledge that parking demand is uncertain; they can be converted to parking spaces if required in the future.

Issue: Parking has detrimental impacts on urban design

Tools:

- **P-10: Design Requirements** aim to minimize the impact of parking on safety, aesthetics, conditions for pedestrians, and traffic flow.

Issue: Parking provision may not reflect wider community goals, such as reducing traffic and congestion

Tools:

- Reduced parking requirements can apply to developments that incorporate **P-2: Demand Management Programs** such as parking pricing and car-sharing.
- **P-9: Parking Maximums** restrict the number of spaces that can be provided, for example to address congestion issues.

Issue: Parking requirements may make small-scale infill projects financially infeasible

Tools:

- **P-8: Waive Minimum Parking Requirements.** Instead of the town or city, the amount of parking provided would be at the discretion of the developer.

Tool P-1: Tailored Parking Requirements

Most minimum parking requirements levied by local jurisdictions – not just in Marin County, but around the country – take into account only two variables, namely land use and the size of development. They are typically expressed in terms of number of spaces required per 1,000 square feet of a particular land use, or per residential unit or (for restaurants and stadiums) number of seats.

In reality, however, parking demand in Marin is affected by many more variables, such as:

- The geographic location of a development – encompassing factors such as the quality of the local pedestrian environment, the number of other land uses within walking distance, and the availability of transit;
- The demographic characteristics of residents; and,
- Demand management programs such as parking pricing and car-sharing.

Indeed, vehicle ownership levels (and thus residential parking demand) vary considerably between different parts of Marin County, from 1.6 vehicles per household in Larkspur, to 2.4 per household in Tomales. In some parts of San Rafael and Marin City, 20% of households do not have a car.

Local jurisdictions can amend their zoning codes to take these variations into account, based on the following factors:

Unit Size. Smaller households tend to own fewer vehicles. In Marin County, average vehicle ownership ranges from 1.1 for one-person households, to 2.3 for households with more than three people. Tailored requirements based on unit size have been introduced (at least to some extent) in many Marin County towns and cities, such as San Anselmo and Larkspur, as well as by the county itself.

Affordable Housing. There is a strong link between vehicle ownership and income, which means that less parking is needed when housing is targeted to low-income households. Corte Madera already reduces parking requirements for affordable housing.

Senior Housing. Senior citizens tend to own fewer vehicles than younger adults, meaning that parking requirements can be reduced for senior housing facilities, including independent living as well as assisted living and convalescent care facilities. Tailored requirements for senior housing have already been introduced by jurisdictions such as Sausalito and the County of Marin.

Rental Units. Marin County households that rent their homes own 28% fewer vehicles, on average, than owner-occupiers. Tailored requirements have already been implemented by Larkspur, and are applicable in any part of the county, particularly in multi-family units where parking can easily be shared between different units

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Transit Corridors/ Downtown. Parking demand is lower in areas that are well served by transit, and in downtowns that offer employment and services within walking distance. Some of the lowest levels are found not just in downtowns, but in other parts of the county that are well-served by transit – for example, with easy access to bus pads on Highway 101. This policy is primarily applicable along transit corridors with frequent service, such as US-101 and San Rafael’s Canal District; around transit hubs in downtown San Rafael, Novato and Marin City; and at ferry terminals and future SMART stations. However, it is also applicable in any mixed-use, walkable downtown; San Rafael and Novato have already implemented such reductions.

References

- A memorandum produced as part of this project provides a detailed inventory of Marin County parking standards, and details of where innovative parking policies have been introduced. It also provides Marin-specific data on variations in vehicle ownership and parking demand. See [X](#)
- Nelson\Nygaard (2002), Housing Shortage/Parking Surplus. Silicon Valley’s opportunity to address housing needs and transportation problems with innovative parking policies.
- Oakland, CA: Transportation and Land Use Coalition. Available at http://www.transcoalition.org/reports/housing_s/housing_shortage_home.html. Chapter 2 discusses how minimum parking requirements can be tailored to meet demand.
- Russo, Ryan (2001), *Planning for Residential Parking: A Guide For Housing Developers and Planners*. Non-Profit Housing Association of Northern California. Available at: www.nonprofithousing.org/actioncenter/toolbox/parking/ The vehicle ownership data and associated model allow users to assess the impact of transit service, household size, income and residential density on parking demand.
- Shoup, Donald (1999). “The Trouble with Minimum Parking Requirements,” *Transportation Research Part A*, 33: 549-574. Provides an overview of the flaws of one-size-fits-all requirements.
- Shoup, Donald (2003), “Truth in Transportation Planning,” *Journal of Transportation and Statistics*, 6(1): 1-16. Discusses the imprecision inherent in minimum parking requirements.
- US Census and Census Transportation Planning Package. Available at www.bayareacensus.ca.gov. This website provides access to detailed data on vehicle ownership and use in different parts of Marin County. Any tailored parking requirements can be based on these data.

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Contents T.B.D. based on
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Tool P-2: Demand Management Measures

Demand management programs help to reduce the need for parking, by encouraging motorists to walk, bicycle, carpool or ride transit. In many cases, developers can be given credit for a commitment to these programs, through appropriate reductions in minimum parking requirements. Alternatively, some could be required for projects in certain locations or over a certain size.

Specific demand management measures include:

Priced Parking. Charging for parking helps to cover some of the substantial costs of parking provision, and reduces parking demand by an average of 18%. In residential developments, the cost of parking can be separated (“unbundled”) from rents and sale prices, again encouraging households to own fewer vehicles. Parking requirements can therefore be reduced substantially for developments that commit to charging for parking (or offering comparable alternatives, such as parking “cash out”), for example through a development agreement. Residential Permit Parking – common in many Marin County towns and cities – or similar programs are a pre-requisite, in order to prevent users simply parking elsewhere to avoid the charges.

Car-Sharing. Car-sharing provides households with access to a fleet of shared vehicles, allowing them to avoid owning a car, or a second or third car. A recent study of San Francisco’s City CarShare found that each shared vehicle takes 6.9 private cars off the road, as members sell or give up their vehicles. This allows parking requirements to be reduced accordingly in developments that incorporate car-sharing. Such reductions are common in cities with car-sharing programs, such as Seattle and San Francisco, and may help spur the program to expand to Marin.

EcoPass Programs, which involve the bulk-purchase of transit passes by employers or property managers, for free provision to employees or residents. EcoPass programs in Santa Clara County, for example, have reduced vehicle trips to work among participants by 19%. Although Golden Gate Transit does not currently offer EcoPasses, it plans to introduce the TransLink universal fare card in early 2005, which may allow their introduction.

Bicycle Parking. Many towns and cities in Marin County, such as Novato, already require bicycle parking to be provided at new developments. A further step may be to allow bicycle parking to substitute for a portion of required automobile parking, as is currently done in Palo Alto’s code.

Other TDM Programs. Other measures that reduce parking demand include changing facilities for cyclists (already required by Novato), Guaranteed Ride Home programs, and carpool matching programs.

References

- Association of Bicycle and Pedestrian Professionals (2002), *Bicycle Parking Guidelines*. Available at <http://www.bicyclinginfo.org/pdf/bikepark.pdf>.

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conversations with TAM Staff, AC
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- Cervero, Robert and Tsai, Yu-Hsin (2003), *San Francisco City CarShare: Travel Demand Trends and Second-Year Impacts*. University of California at Berkeley, Institute of Urban and Regional Development. Working Paper 2003-05. Documents impact of City CarShare on vehicle ownership and travel.
- Shoup, Donald (1999b), “*In Lieu of Required Parking*,” *Journal of Planning Education and Research*, 18: 307-320. Discusses impact of parking pricing strategies.
- Litman, Todd (2004), “*Parking Pricing*,” TDM Encyclopedia. Available at <http://www.vtpi.org/tdm/tdm26.htm>.

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Tool P-3: Shared Parking

Most land uses have different times of peak demand, allowing them to share the same physical parking spaces. For example, demand from uses such as residential and bars is lowest during the day, allowing those spaces to be used by office workers.

Most local jurisdictions in Marin County already allow reductions in parking requirements for complementary uses that share parking. In many cases, the lease or other agreement between the parking facility owner and the developer must be filed with the town or city. However, there are often constraints regarding its use, such as:

- *Narrow eligibility.* Some jurisdictions (e.g. the County) provide for shared parking only when land uses have different hours of operation that do not overlap. Others, such as Sausalito and Larkspur, allow shared parking between “weekend” and “weekday” uses, and “daytime” and “nighttime” uses. These ordinances may not fully allow for the benefits of shared parking when land uses have different time of peak parking demand (e.g. office and retail), even if their hours of operation substantially overlap. Some jurisdictions (e.g. Novato) do not allow residential uses to share parking.
- *No as of right reduction.* Some local jurisdictions make reductions for shared parking subject to staff (e.g. San Rafael) or Planning Commission (e.g. Mill Valley) discretion.
- *Limited distance.* Some towns and cities require that shared parking be within a minimum distance of the site (e.g. 250 feet in Larkspur), even if motorists are willing to walk further.
- *Lack of mixed-use development.* Shared parking, by definition, is only useful when mixed-use development is permitted under local zoning codes (either on the same or nearby parcels).

A simpler, more productive approach may be to state that shared parking will be allowed when two or more uses have distinct and differing peak parking usage periods.

References

- Urban Land Institute (1983), *Shared Parking*. Provides a wealth of data on times of peak demand, allowing shared parking potential to be calculated.
- US EPA (forthcoming). *Parking Spaces/Community Places. Finding the Balance through Smart Growth Solutions*. Pages X through X provide examples of successful shared parking arrangements.

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Tool P-4: In-Lieu Fees and Assessments

In-lieu fees are a special form of shared parking. Rather than constructing parking on-site, the developer pays a fee to the town or city to cover the cost of providing the spaces in public parking facilities, which provide a shared resource for the entire neighborhood.

In-lieu fees can overcome many of the barriers to shared parking, such as the need to find a nearby parking facility with surplus spaces. They can also improve urban design, as in many cases on-site parking must be awkwardly squeezed into a parcel. In addition, economies of scale may be realized through centralizing the supply and management of parking, and the town or city gains increased control over pricing and management.

Parking assessment districts, in contrast, raise revenue from assessments on property owners to finance common, shared parking facilities. The concept is similar to in-lieu fees, but assessments are made annually on all property owners, rather than just a one-time payment for new developments.

Both tools work best in downtowns, and may be combined with other property assessments (for example, for streetscape improvements or marketing). They are particularly useful where on-site parking is physically difficult or expensive, but can be used in any situation where the town or city wishes to actively promote shared parking.

In-lieu fees are currently offered by many local jurisdictions in Marin County, such as Larkspur and Mill Valley. However, there are often constraints regarding their use, such as:

- *Applies in limited area.* In Corte Madera, the in-lieu fee option only applies in the Village Square area. In Novato, the option only applies downtown.
- *Strict conditions.* Some (e.g. Mill Valley) apply the in-lieu fee only to developments that cannot provide the required parking on-site. Others, such as Tiburon, allow in-lieu fees as an option for all developers.

Some jurisdictions, most notably San Rafael and Novato, also have downtown parking assessment districts, in which parking requirements are reduced or waived. In downtown San Rafael, parking requirements are waived for the first 1.0 FAR, and the city's draft General Plan includes policies to create new assessment districts where appropriate.

References

- Kolozsvari, Douglas and Shoup, Donald (2003), "Turning Small Change into Big Changes," *Access*, Fall 2003, pp 2-7. This article discusses in-lieu fees and other approaches in Pasadena.
- US EPA (forthcoming). *Parking Spaces/Community Places. Finding the Balance through Smart Growth Solutions*. Pages xxx provide examples of successful in-lieu fee systems arrangements.

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Tool P-5: Tandem Parking/Other Flexible Solutions

Flexible solutions such as tandem parking, automated parking lifts, and valet parking allow more parking in less space, helping to reduce housing costs and environmental impacts, and improve urban design. However, many Marin County towns and cities provide detailed specifications for the layout and design of parking areas, making it difficult to introduce these strategies.

Other jurisdictions explicitly prohibit tandem parking, or allow it only for limited uses (most commonly second units or to satisfy guest parking requirements). However, the draft Countywide Plan Update includes a policy to review and amend the County Code to “encourage shared, tandem, elevator and other flexible parking arrangements that will facilitate space-saving and attractive design.”

References

To follow

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Tool P-6: On-Street and Off-Site Parking

Parking does not need to be located on the same parcel as the use it serves in order to be useful to motorists. Indeed, providing developers with the option of offsite parking can often be desirable, for example to reduce urban design impacts and promote shared parking, or if the parcel is small or awkwardly shaped.

Zoning ordinances can also recognize that on-street spaces are functionally the same as off-street parking, by allowing spaces along the property's frontage to count towards parking requirements. Indeed, curb parking spaces are often preferred by motorists.

There is considerable variation in the manner in which local jurisdictions treat off-site parking. Some prohibit it altogether or only allow it where on-site parking is infeasible (e.g. San Rafael), while some allow off-site parking subject to approval of a use permit (e.g. Novato). Other towns and cities, in contrast, are extremely flexible and allow parking to be provided within a certain distance of the site as of right (250 feet in Larkspur, and 800 feet in some districts in Corte Madera).

On-street parking is explicitly included in the requirements for some land uses in some jurisdictions (e.g. Mill Valley and Larkspur). However, this tends to be inconsistent, applying only to some types of development such as single family. In other cases, on-street parking does not appear to be considered at all when setting parking requirements.

References

To follow

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Tool P-7: Landscape Reserves

Estimating parking demand is not an exact science. Landscape reserves acknowledge these uncertainties, by allowing developers to set aside land that can be converted to parking if demand is higher than expected, or to cope with future expansions. The strategy also allows the number of spaces constructed to be set at the “best estimate” of demand, without including a margin of error. Landscaping can be used to turn this set-aside land into an attractive amenity. In most cases the developers never need to utilize that land and it can be kept as a park or landscape reserve for public enjoyment.

Landscape reserves are appropriate anywhere in Marin County. They are already permitted in Corte Madera. Its ordinance states:

- 18.20.050 (8) (1)

Notwithstanding subsection (9) of this section, the planning commission may permit a property owner to designate a portion of his required off-street parking area as a “parking reserve” and to place improvements such as landscaping, tennis courts, and the like in the area which are compatible with the future use of the reserve as a parking lot. If the planning commission finds that the reserve is needed for off-street parking for users of the site, the owner shall improve the reserve as a parking lot within one hundred twenty days from the date the finding is made by the planning commission.

References

- US EPA (forthcoming). Parking Spaces/Community Places. Finding the Balance through Smart Growth Solutions. Pages xxx provide examples of landscape reserves.

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Tool P-8: Waive Minimum Parking Requirements

Minimum parking requirements are intended to achieve specific goals, most commonly avoiding overspill and congestion of on-street parking. In some cases, however, these goals can be achieved through other policies, such as Residential Permit Parking programs or other on-street parking regulation.

Eliminating parking requirements would not mean that no new parking would be constructed. Rather, it would mean that developers would determine the appropriate level of supply, based on market demands.

Minimum parking requirements could be waived anywhere in Marin County where there are measures in place to combat overspill. However, the policy is likely to be most useful in transit corridors and downtowns.

With the partial exception of San Rafael, where a certain amount of parking is provided through the assessment district, no local jurisdiction in Marin County has followed this approach.

References

- Shoup, Donald (1999). "The Trouble with Minimum Parking Requirements," *Transportation Research Part A*, 33: 549-574.

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Contents T.B.D. based on
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Tool P-9: Parking Maximums

In contrast to minimum parking requirements, parking maximums restrict the total number of spaces that can be constructed. Reasons for setting maximum requirements may include a desire to:

- Restrict traffic from new development, for example through relating parking provision to roadway capacity
- Promote alternatives to the private automobile
- Limit the amount of land that is devoted to parking, for example to preserve open space or limit stormwater runoff

Parking maximums could be introduced anywhere in Marin County where there are measures in place to combat overspill. While the policy is most likely to be appropriate in transit corridors, downtowns and areas with high levels of traffic congestion, it can be useful in any community that wants to limit traffic or the amount of land devoted to parking. Novato already has parking maximums, which are the same as the city's minimum requirements for most uses.

References

- Millard-Ball, Adam (2002). "Putting on Their Parking Caps," *Planning*, April 2002, pp 16-21.

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Tool P-10: Design Requirements

Design requirements aim to minimize the impact of parking on safety (both traffic safety and safety from crime), visual amenity, pedestrian friendliness and traffic flow. For example, they may regulate surface lots and blank walls of parking structures, which are particularly damaging to efforts to create an attractive pedestrian environment, with retail frontages and windows facing the street. Design controls can reduce the amount of land devoted to parking (even if the number of spaces remains the same), and screen it from the main pedestrian street, with access via a side street or alley.

Design controls are appropriate anywhere in Marin County. Many requirements have already been introduced by towns and cities, most commonly to require landscaping, or to prohibit parking in required setbacks. However, fewer regulations are focused on reducing the amount of land consumed by parking, or its impact on the pedestrian environment. These might include a prohibition on parking in front setbacks, or incentives for underground parking.

[CD+A will add further design guidance to this section]

References

To follow

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C.5.3 Transportation Funding [and Implementation Steps] (*Sample text is limited to Funding*)

Creating a transportation network takes considerable funding – often in the multi-million dollar range. New projects and new project ideas that emerge as a result of the implementation of the TOD/Ped Toolkit and guidelines will, necessarily, draw upon the limited resources currently available in Marin County. Many of the items can be layered into the ongoing operations of various implementation agencies, provided those agencies are aware of the measures recommended and are able to build these into their work program. Some projects will require additional resources such as new traffic signals, sidewalk extensions, new bike paths or lanes, or a transit plaza. Funding sources such as the new Local HIP and Local TLC will play a role in project implementation. Other funding sources will also be required to ensure that projects move from an idea toward implementation.

Local Housing Incentive Program

Grant Size: \$150,000 - \$500,000. \$970,000 tri-annually county-wide

Local HIP Transportation Capital funds reward local governments giving planning and zoning approvals, and building permits to high-density housing, particularly affordable housing, and mixed-use developments at or near transit stops. The key objectives of the Local HIP program are to increase the housing supply in areas of the region with existing infrastructure and services in place, including transit, retail, jobs and cultural activities; locate new housing where non-automotive transportation options such as walking, bicycling, and taking transit are viable transportation choices; and establish the residential density and ridership markets necessary to support high-quality transit service.

Local TLC Program

Grant Size: \$150,000 - \$500,000. \$323,000 annually county-wide.

The Local TLC Capital Program funds transportation infrastructure improvements to pedestrian, bicycle and transit facilities. The key objectives of this program are to encourage pedestrian, bicycle and transit trips; support a community's larger infill development or revitalization efforts; and provide for a wider range of transportation choices, improved internal mobility, and stronger sense of place. Typical capital projects include new or improved pedestrian facilities, bicycle facilities, transit access improvements, pedestrian plazas, and streetscapes. Funds can be used for preliminary engineering (design and environmental), right-of-way acquisition, and/or construction.

Marin County Transportation Sales Tax Measure

(Carey please describe or may I [Trent] get a copy of the measure?)

Transportation For Livable Communities

Grant size: \$500,000 - \$3,000,000. \$9 million annually regionally

The purpose of the Transportation for Livable Communities (TLC) Capital Program is to support community-based transportation projects that bring new vibrancy to downtown areas, commercial cores, neighborhoods, and transit corridors, enhancing their amenities and ambiance and making them places where people want to live, work and visit. TLC provides funding for projects that are developed through an inclusive community planning effort, provide for a range of transportation choices, and support connectivity between transportation investments and land uses.

Regional Housing Incentive Program

Grant Size: \$500,000 - \$3,000,000. \$9 million annually regionally

The Housing Incentive Program rewards local governments that build high-density housing, particularly affordable housing, and mixed-use developments at transit stops. The key objectives of this program are to (1) increase the housing supply in areas of the region with existing infrastructure and services in place, including transit, retail, jobs and cultural activities; (2) locate new housing where non-automotive transportation options such as walking, bicycling, and taking transit are viable transportation choices, and (3) establish the residential density and ridership markets necessary to support high-quality transit service. Local government agencies are required to spend HIP funds on either a TLC capital project that serves the new housing development or a TLC capital project that supports TLC goals but is located elsewhere within the jurisdiction.

State Safe Routes to Schools

Grant Size: \$450,000 maximum. \$20,000,000 annually state-wide

The Safe Routes to School (SR2S) funding comes from the Hazard Elimination Safety (HES) Safety Set-Aside program of TEA-21. One third of the money is now being designated for safe routes to schools (bicycle, pedestrian and traffic calming projects). SR2S is slated to sunset on January 1, 2008.

Transportation Enhancement Activities

Grant Size: Varies. \$60 million annually state-wide

The Transportation Enhancements Program is designed to strengthen the cultural, aesthetic, and environmental aspects of the nation's intermodal transportation system. Qualifying projects include bicycle, pedestrian, transit, landscaping, public art or historic projects linked to transportation. The money from the federal Transportation Enhancements Program has been rolled into the State Transportation Improvement Program allocation process.

State Bicycle Transportation Account

Grant Size: \$1,800,000 maximum. \$7,000,000 annually state-wide

BTA provides state funds for city and county projects that improve the safety and convenience of bicycle commuters. Eligible projects include new bikeways that serve major transportation corridors, secure bicycle parking, bicycle-carrying facilities on transit vehicles, installation of traffic control devices, planning, bikeway improvements, maintenance, and hazard eliminations.

State Transportation Fund for Clean Air

Grant Size: N/A. \$9,000,000 annually regionally; plus \$350,000 to Marin County annually

The Transportation Fund for Clean Air (TFCA) is a grant program funded by a \$4 surcharge on motor vehicles registered in the Bay Area. This generates approximately \$20 million per year in revenue. TFCA's goal is to implement the most cost-effective projects in the Bay Area that will decrease motor vehicle emissions, and therefore improve air quality. Projects must be consistent with the 1988 California Clean Air Act and the Bay Area Clean Air Plan. Qualifying projects include bike programs, ridesharing, clean fuel buses, traffic management, and rail/bus integration projects.

Transportation Development Act Article 3

Grant Size: N/A. \$200,000 annually county-wide

TDA states that one quarter cent of retail sales tax is returned to the county of origin for the purpose of funding transportation improvements in that county such as bicycle and pedestrian facilities, safety programs and planning projects in that county.

Federal Congestion Management and Air Quality Improvement Program

The Congestion Mitigation and Air Quality (CMAQ) Improvement Program funds projects in Clean Air Act non-attainment areas. Projects are to help attain the national ambient air quality standards stated in the 1990 Clean Air Act amendments. Grants can be used for capital projects or, in some case, operating funds for a three year start up period.

Federal Surface Transportation Program

The Surface Transportation Program (STP) provides flexible funding that may be used by state and local governments for projects on any federal-aid highway, bridge projects on any public road, transit capital projects, and public bus terminals and facilities. Additionally, a portion of funds reserved for rural areas may be spent on rural minor collectors.

References:

- Safe Routes to Schools – State of California
<http://www.dhs.ca.gov/epic/sr2s/>
<http://www.dot.ca.gov/hq/LocalPrograms/saferoute2.htm>
- Safe Routes To Schools – Marin County
<http://www.saferoutestoschools.org/index.html>
- Caltrans Division of Local Assistance – with information on many funding programs
<http://www.dot.ca.gov/hq/LocalPrograms/index.html>
Caltrans Local Assistance publications are available online and on a set of two CDs containing manuals, handbooks, and other publications that address procedures, practices, policies, and standards for local agencies and consultants working on local projects. See www.dot.ca.gov/hq/LocalPrograms/lam/LApubsCD.htm or call 916.445.3520 for more information or to order a set.
- National Transportation Enhancements Clearinghouse
http://www.enhancements.org/12_activities.asp
- Metropolitan Transportation Commission Regional Bicycle Plan
<http://www.mtc.ca.gov/publications/majmast.htm> (2001) Regional Bicycle Plan for the San Francisco Bay Area)
- Institute of Transportation Studies, UC Berkeley – Web resources from Caltrans Local Assistance
<http://www.its.berkeley.edu/techtransfer/resources/pub/nl/04-1/links.html>
- Marin County Bicycle Coalition (ABC's of Bicycle Funding)
<http://www.marinbike.org/Resources/FundingABC.htm>